REMARKS

Claims 15-23 are pending in the application. Claims 1-14 having been previously canceled.

Claim 23 has been withdrawn by the Examiner as being directed to a non-elected invention. Claims 15-16 and 18-22 have been rejected. Claim 17 has been objected to.

Claims 15, 16, and 23 are hereby cancelled without prejudice to Applicants' right to re-file those claims in a related application and for reasons unrelated to the prior art or any outstanding rejection.

New claims 24 and 25 are hereby added.

In the Response to March 10, 2004 Office Action, the Examiner confirmed that the July 22, 2003 Preliminary Amendment filed in connection with the instant application has been entered.

In accordance with the Examiner's instructions in the June 17, 2004 Office Action, the reference to related applications in the specification has been amended to reflect the issuance of U.S. Patent No. 6,652,856 from U.S. Patent Application Serial No. 10/061,658

Complete copies of references EG-EL identified in Applicants' July 22, 2003 IDS are hereby submitted in the accompanying supplementary IDS, as requested by the Examiner. Additional references related to VLA-1 are also provided with the supplementary IDS, together with the requisite fee. Applicants respectfully request that the Examiner consider each of the references identified on the accompanying supplementary IDS in connection with his examination of the pending claims.

The instant amendments to claims 21 and 22 obviate the outstanding rejections under 35 U.S.C. § 112, ¶ 1: the term "equivalent", which was objected to by the Examiner, has been deleted and the Examiner has acknowledged that "[a]pplicant is in

possession of a method for treatment or inhibiting rheumatoid arthritis comprising administering to a subject an anti-$\alpha 1\beta 1$ integrin antibody." *See* June 17, 2004 Office Action, p. 4.

Applicants understand that new claims 24 and 25 should be considered allowable in light of the Examiner's representation in the June 17, 2004 Office Action that claim 17 would be allowable if rewritten in dependent form to incorporate the limitations of claims 15 and 16. *Id.* at 7. For the sake of clarity, Applicants present two new claims (claims 24 and 25) which effect the amendments to claim 17 suggested by the Examiner.

Claims 19-22 have been rejected under 35 U.S.C. § 102(e)(2) as being anticipated by United States Patent No. 5,855,888 ('888 Patent) and U. S. Patent No. 5,788,966 ('966 Patent). The Examiner maintains that the '888 and '966 Patents anticipate claims 19-22 because they describe the treatment of rheumatoid arthritis using an anti-VLA-1 antibody. The '888 and '966 Patents do not anticipate amended claims 19-22, as explained hereinafter.

The invention disclosed in the '888 Patent relates to the use of VLA-2 (as opposed to VLA-1) monoclonal antibodies in the treatment of rheumatoid arthritis. (*See* '888 Patent; column 2, lines 34-38). In the experiment of example 1 of the '888 Patent, the '888 patentees showed that a VLA-2 monoclonal antibody was around two times more effective than a VLA-1 monoclonal antibody (Sumitomo SE-A1013) in inhibiting swelling in a murine rheumatoid arthritis model. However, the '888 Patent did not disclose that the epitope of Sumitomo SE-A1013 comprised the amino acids of SEQ ID NO: 8 of the instant application. The '888 Patent fails to provide any information regarding the epitope of Sumitomo SE-A1013.

Similarly, the '966 Patent did not disclose that mAb 1B3.1 bound to an epitope comprising SEQ ID NO: 8 of the instant application.[1] In fact, the '966 Patent indicated

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[1] *See also* August 22, 2003 Response filed in co-pending United States Patent Application No. 09/996,738 (Applicants do not know if mAb 1B3.1 targets SEQ ID NO: 8).

that not all VLA-1 antibodies target the same epitope and stressed that mAb 1B3.1 bound to a different epitope than the known VLA-1 antibody TS2/7. (*See* '966 Patent; column 8, lines 42-46). The '966 Patent, at column 8, lines 39-46, does not disclose that the epitope of mAb 1B3.1 includes the amino acids of SEQ ID NO: 8. The fact that the epitope of the antibodies used in the methods claimed herein is defined as comprising SEQ ID NO: 8 does not mean that the epitopes of those antibodies encompass the mAb 1B3.1 epitope. *Kern, The Journal of Biological Chemistry, Vol. 269, No. 36, pp. 22811-22816 (1994)*(*Kern*) is instructive on this point.

Kern analyzed the binding of mAb 1B3.1 to the α_1 I- domain. While the human α_1 I- domain disclosed in Figure 2 of *Kern* includes the amino acid sequence of SEQ ID NO: 8, *Kern* did not specify that mAb 1B3.1 bound to an epitope within the human α_1 I- domain which included the amino acid sequences of SEQ ID NO: 8.

In the absence of any conclusive bases which establish that Sumitomo SE-A1013 and mAb 1B3.1 bind to an epitope comprising SEQ ID NO: 8, the '888 and '966 Patents should not be found to anticipate any of the pending claims as amended herein. *See, e.g., In Re Cruciferous Sprout Litigation*, 301 F.3d 1343 (Fed.Cir.), *reh'g denied*, 2002 U.S. App. LEXIS 22195 (Fed.Cir., Sept. 30, 2002), *cert. denied*, _U.S._, 2003 U.S. LEXIS 2004 (2003)(to anticipate inherently, prior art must necessarily function in accordance with, or include, the claimed limitation at issue); *In re Spada*, 911 F.2d 705 (Fed. Cir. 1990)(burden of proof on novelty to be shifted to applicant only where there is a sound basis to believe that claimed subject matter and prior art were the same); *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367 (Fed. Cir. 1986)(prior art reference did not disclose antibody affinity claim limitation and was not anticipatory).

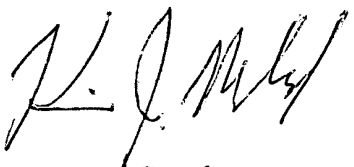
In response to the provisional obviousness-type double patenting rejection of claims 19-22 based on co-pending United States Patent Application No. 09/996,738, Biogen Idec, Inc. MA, through the accompanying terminal disclaimer, hereby disclaims the terminal portion of any patent granted on the instant application, which would extend

beyond the expiration date of any patent granted on United States Patent Application No. 09/996,738, filed on November 30, 2001, as shortened by any terminal disclaimer.

In accordance with 37 C.F.R. § 1.78(c), Applicants and their assignee Biogen Idec, Inc. MA, Inc. hereby confirm that the invention of the pending claims and the invention claimed in co-pending United States Patent Application No. 09/996,738 have at all times been commonly owned by or subject to an obligation of assignment to Biogen Idec, Inc. MA, Inc. or its predecessor corporation Biogen, Inc., such that the invention of United States Patent Application No. 09/996,738 and the invention claimed in the instant application may not be cited as prior art against each other under 35 U.S.C. §§ 103(a)/102(f),(g). Representative assignment documents for both applications are attached.

In light of the foregoing, Applicants maintain that each of the pending claims are patentable and are in a condition for allowance. Accordingly, Applicants respectfully request that each of the pending claims be passed to issue.

Respectfully submitted,



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